

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Currently amended) A filling valve comprising a valve housing internally formed with a liquid passage for filling which communicates with a liquid supply piping for filling and having a filling nozzle at ~~its~~a lower end, a liquid valve for opening or closing the liquid passage, liquid valve elevating means for elevating the liquid valve, seal means mounted on the valve housing for sealing the mouth of a vessel supplied, seal elevating means for elevating the seal means and vessel relative to each other, content detecting means for detecting the quantity of liquid which is filled into the vessel, and an exhaust passage formed in the valve housing for exhausting a gas from within the vessel during a filling operation;

wherein the exhaust passage has an opening disposed toward the vessel which is disposed outside of an opening of the filling nozzle and the opening of the filling nozzle is maintained above the elevation of the liquid level which is filled into the vessel during the filling operation.

2. (Currently amended) ~~A~~The filling valve according to Claim 1 ~~in which,~~ wherein the liquid passage for filling is formed with a portion of a greater diameter at a location where ~~it~~the liquid passage communicates with the liquid supply piping for filling, the portion of a greater diameter having a liquid channel area which is greater than the liquid channel area of the liquid supply piping, the liquid passage being ~~also~~ formed with a restriction at a location downstream of the portion of a greater diameter.

3. (Currently amended) ~~A~~The filling valve according to Claim 1, further comprising a straightening vane disposed in the liquid passage ~~for filling~~ at a point upstream of the liquid valve for straightening a flow of the liquid to be filled.

4. (Currently amended) ~~A~~The filling valve according to Claim 1 ~~in which~~, wherein the filling nozzle has a nozzle liquid passage which is tapered in the downward direction.

5. (New) A filling valve for filling a vessel comprising:

- a valve housing internally formed with a liquid passage for filling, the valve housing including a filling nozzle with an opening at a lower end;

- an exhaust passage formed within the valve housing for exhausting a gas from the vessel during a filling operation;

- a separate liquid supply piping that opens into the liquid passage of the valve housing;

- a liquid valve for opening or closing the liquid passage;

- a liquid valve controller for controlling the liquid valve;

- a seal device mounted onto the valve housing for sealing the mouth of a vessel to be filled;

- a seal device controller for vertically moving the seal device and a vessel relative to each other; and

- a content device for determining the amount of liquid filled into a vessel,

- wherein the exhaust passage of the valve housing exhausts gas from within a vessel during a filling operation, and

- wherein the opening of the exhaust passage is maintained above the elevation of the vessel during a filling operation.

6. (New) The filling valve according to Claim 5, wherein the content device for determining the amount of

liquid filled into a vessel comprises a content detector that detects the liquid at the separate liquid supply piping.

7. (New) The filling valve according to Claim 5, wherein the liquid valve for opening or closing the liquid passage is free from passages or a vent tube extending therethrough.

8. (New) The filling valve according to Claim 5, wherein the liquid valve comprises a solid rod axially movable along a longitudinal axis of the valve housing for opening or closing the liquid passage.

9. (New) The filling valve according to Claim 5, wherein the filling nozzle comprises a single opening that is shaped to enable liquid to flow into a center of a vessel, and wherein the opening of the exhaust passage is disposed outside of the opening of the filling nozzle.

10. (New) The filling valve according to Claim 5, further comprising a snift passage formed in the valve housing and a snift valve for communicating the snift passage with the atmosphere.

11. (New) The filling valve according to Claim 10, wherein the snift passage is parallel to the exhaust passage and opens into the valve housing at a location adjacent to the opening of the exhaust passage, and wherein the opening of the snift passage is disposed outside of the opening of the filling nozzle.

12. (New) A filling valve for filling a vessel comprising:

a valve housing internally formed with a liquid passage for filling, the valve housing including a filling nozzle with an opening at a lower end;

a first passage formed in the valve housing and having an opening that is disposed outside of the opening of the filling nozzle;

a second separate passage formed in the valve housing and having an opening that separately opens into the liquid passage of said valve housing;

a separate liquid supply piping that opens into the liquid passage of the valve housing;

a liquid valve for opening or closing the liquid passage;

a liquid valve controller for controlling the liquid valve;

a seal device mounted onto the valve housing for sealing the mouth of a vessel to be filled;

a seal device controller for vertically moving the seal device and a vessel relative to each other; and

a content determining device for determining the amount of liquid filled into a vessel.

13. (New) The filling valve according to Claim 12, wherein the first passage comprises an exhaust passage for connecting to a headspace of a liquid tank for filling.

14. (New) The filling valve according to Claim 13, wherein the opening of said exhaust passage is maintained above the elevation of the liquid in a vessel during a filling operation.

15. (New) The filling valve according to Claim 12, wherein the first passage comprises an exhaust passage and the second passage comprises a snift passage, and wherein the openings of said exhaust passage and said snift passage are

maintained above the elevation of the liquid in a vessel during a filling operation.